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Att: CDM Executive Board

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CDM Ref 2023	MLEH/KCHA	8 December 2008

Response to request for review
"Nimoo-Bazgo Hydroelectric Project" (2023)

Dear Members of the CDM Executive Board,

We refer to the issues raised in the requests for review of project activity 2023 "Nimoo-Bazgo Hydroelectric Project" and we would like to provide the following response to the issues raised by these requests for review.

Comment 1: *The DOE should clarify how it has validated the input values in the investment analysis in line with EB 41, Annex 45, paragraph 6.*

DNV's response:

The electricity generation and plant load factor value used in the IRR calculations are directly taken from detailed project report (DPR)[1] of February 2004. It was confirmed from the cost estimate abstract[2] of December 2005 that the project cost is INR 611 crores. The total investment can be divided into INR 183.3 crores (30%) equity, INR 270 crores sub-ordinate loan from the government of India and the remaining as commercial loan from the National Hydro Power Corporation (NHPC). This was evidenced from the Approval letter dated 24 August 2006[3] and the letter regarding the sub-ordinate loan dated 23 November 2006[4]. The tariff, depreciation charges, return on equity, interest on working capital and operational and maintenance charges were computed by the PP based on the Central Electricity Regulatory Commission Guidelines of 26 March 2004[5] The interest on loan from NHPC is 8% as per Rural Electrification Corporation limited applicable for all public sector projects[6].

The investment analysis was developed in December 2005, based upon the data sources as stated above. The electricity generation value and load factor taken from the DPR from 2004 was confirmed to still be valid at the time of the development of the financial analysis and at the project starting date, 23 September 2006, during validation of the project. The investment costs were confirmed to be valid from the two letters dated 24 August 2006 and 23 November 2006 respectively. According to the Central Electricity Regulatory Guidelines of 26 March 2004, the

[1] Detailed project report (DPR) of February 2004, page 2. The DPR is included as Annex 1.
[2] Cost estimate abstract of December 2005 included as Annex 5.
[3] Approval letter for the Nimoo-Bazgo hydropower project from NHPC and the Ministry of Power, Government of India dated 24 August 2008. Included as Annex 3.
[4] Letter regarding the sub-ordinate loan from NHPC and the Ministry of Power, Government of India, dated 23 November 2006.
[5] Central Electricity Regulatory Commission guidelines of 26 March 2004[5] (http://www.cercind.gov.in/28032004/finalregulations_terms&condition.pdf) Chapter 3 CERC regulation page no 37 to 40, included as annex 2.
[6] http://www.recindia.gov.in/download/int_rates_21_09_04.pdf, included as Annex 6

values obtained from this document should remain in force for a period of five years and hence applicable at the time of the development of the investment analysis and the project starting date. DNV was able to confirm that changes in the interest rate in the time period between 2004 to 2006 have led to an increased interest rate, hence the interest rate based on a source from 2004 is conservative.

Comment 2: *The DOE is requested to clarify how it has validated*:

a) That the electricity tariff applied in the investment analysis is in line with the PPA signed in October 2005

DNV's response:

The Power Purchase Agreement (PPA) for the proposed project was signed in October 2005[7]. Point no.6.1 states "*The tariff to be charged and its associated Terms and Conditions for the energy to be supplied by NHPC from the project shall be as per tariff Notifications/Orders/directions issued by CERC from time to time*".

The tariff is worked out based on the CERC regulations of March 2004[5] Accordingly the first year sale rate was worked out at INR 2.71 per unit as per existing CERC guidelines for tariff fixation at the time of signing PPA in October 2005[8]. The IRR is worked out by adopting first year sale rate as constant tariff as per the existing practice being adopted by the Project Appraisal & Management Division, Planning Commission for Hydroelectric projects. There is no escalation considered in the IRR sheet this is due to the existing practice being adopted by the Project Appraisal & Management Division, Planning Commission for Hydroelectric projects.

b) The benchmark of 10.25%, in line with the data provided in the spreadsheet, which mentions an 8% interest on loan rate.

DNV's response:

The benchmark chosen for the project activity is the priming lending rate for public sector banks as of December 2005[9], ranging 10.25% – 10.75%, where 10.25% is chosen as the most conservative value. DNV was able to confirm this rate, and accepts the priming lending rate as an appropriate benchmark given the reasonable premium compared to the loan interest.

Comment 3: *The DOE is requested to clarify how similar activities were included in the common practice analysis.*

DNV's response:

The statistics of Central Electricity Authority (CEA), Government of India website data[10] was used to prove that hydro power plants with capacity less than 50MW is not a common practice in the Jammu and Kashmir state and northern region of India. The power generation from hydro projects of capacity less than 50 MW is considered in the state of Jammu and Kashmir and it was found that there are only 4 projects of this capacity namely: Gandhabra (15 MW), Mohara (9 MW), Stakna (4 MW) and Sewa-III (9MW).

[7] Power Purchase Agreement, included as Annex 7.
[8] http://www.cercind.gov.in/28032004/finalregulations_terms & condition.pdf
[9] Reserve Bank of India, Annual report 2005-2006.
[10] www.cea.nic.in

DNV verified that CEA website was used to carry out the common practice analysis and the details of similar plants were obtained from the Carbon-di-oxide database, which is publicly made available by Central Electricity Authority, Government of India. It was verified that hydro power plants with capacity of less than 50 MW constitutes around 1.6% in the state of Jammu and Kashmir and 0.8% in the northern India. Considering these arguments, DNV is of the opinion that establishing a hydro power plant of capacity less than 50 MW is not common practice. The above discussion was also presented in the PDD as well as in DNV's validation report.

Comment 4: *The DOE is requested to clarify*

a) The change in the combined margin emission factor from the PDD made available for public consultation.

DNV's response:

The PDD was web hosted during 31 October 2007 to 29 November 2007.The combined margin emission factor used in the published PDD for emission reduction calculations is 0.76 from December 2006, but the latest emission factor available in CEA website at that time was June 2007 data. This emission factor value was referred from the Central Electricity Authority website[11] – CO_2 baseline database – version 1.1 dated December 2006. The combined margin emission factor was cross checked during validation and was found outdated at the time of submission of the PDD for web hosting. Hence a clarification was raised in the validation report to use the latest data available at the time of PDD submission, i.e., CO_2 baseline database version 02 dated June 2007. Based on the CEA baseline database version 02, the combined margin was revised to be 0.793 in the final PDD submitted for registration. Hence there is a change in combined margin emission factor.

b) How the grid emission factor was validated in line with the requirements of the methodology.

DNV's response:

The grid emission factor data used in the emission reduction calculations of the proposed project was sourced from the data published by Central Electricity Authority (CEA), Government of India[12]. This body, under Government of India, is besides other functions, also responsible for the collection and recording of the data concerning the generation, transmission, trading, distribution and utilization of electricity and carry out studies relating to cost, efficiency, competitiveness and such like matters; make it public from time to time the information secured.

In the recent past, this organization took an initiative to make use of the available data (power plants, generation details, fuel consumptions and other relevant data) for the calculation of emission factor for different grids available in the country. The initiative was a contribution of the organization towards CO_2 emissions reduction commitment of Government of India. CEA being the central authority (under the government of India), data used by the CEA for emission factor calculations can be considered as the most authentic data related to the power plants, fuels and the generation details.

Furthermore, the CEA calculations are based on the approved baseline methodology ACM0002 "Consolidated baseline methodology for grid-connected electricity generation from renewable

[11] (www.cea.nic.in)

[12] (www.cea.nic.in). Central Electricity Authority is a statutory organization constituted by Government of India under Section 3 of the repealed Electricity (Supply) Act, 1948.

sources**".** DNV has verified the user guide published by CEA[13] for the calculation of grid emission factor and found it to be in accordance with the methodology.

Comment 5: *The DOE should confirm that the surface area at full reservoir level is to be recorded at the start of the project as required by the methodology.*

DNV's response:

DNV has confirmed from a letter from NHPC (annex 8) and revised PDD (annex 9), that the surface area of the reservoir will be monitored once before the start date, as per the methodology requirement. In the letter of 27 November 2008, the project participant NHPC has confirmed that the surface area will be monitored at full reservoir level at the start of the project activity. This will be monitored once before the start of operation of the project activity as per the methodology requirement.

We sincerely hope that the Board accepts our aforementioned explanations.

Yours faithfully
for DET NORSKE VERITAS CERTIFICATION AS

Michael Lehmann
Technical Director
Climate Change Services

Annexes

Annex 1: Extract of Detailed project report – for generation and PLF

Annex 2: CERC regulations – March 2004

Annex 3:Management approval letter for 30% Equity and commercial bank loan dated 24 August 2006

Annex 4: Management approval letter for sub – ordinate debt dated 23 November 2006

Annex 5: Cost abstract – Government of India

Annex 6: Rural Electrification Corporation limited – September 2004

Annex 7: Power purchase agreement dated 26 October 2005

Annex 8: NHPC-Monitoring of Surface Area Letter dated 27 November 2008

Annex 9: Revised PDD (included in PP's response)

[13] http://www.cea.nic.in/planning/c%20and%20e/user_guide_ver2.pdf